



1

SEQUENCE LISTING

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<120> CARBOHYDRATE-ASSOCIATED PROTEINS

<130> 059314-0301

<140> 10/534,578
<141> 2005-05-11

<150> PCT/US03/035947
<151> 2003-11-10

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<151> 2003-04-16

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<151> 2003-03-20

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<151> 2003-01-21

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<170> PatentIn Ver. 3.3

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Ala Ser Tyr Ser Glu Thr Val Thr Cys Glu Asp Ala Gln Lys Thr Cys
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Pro Ala Val Ile Ala Cys Ser Ser Pro Gly Ile Asn Gly Phe Pro Gly
35 40 45
Lys Asp Gly Arg Asp Gly Thr Lys Gly Glu Lys Gly Glu Pro Gly Gln
50 55 60
Gly Leu Arg Gly Leu Gln Gly Pro Pro Gly Lys Leu Gly Pro Pro Gly
65 70 75 80
Asn Pro Gly Pro Ser Gly Ser Pro Gly Pro Lys Gly Gln Lys Gly Asp
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Pro Gly Lys Ser Pro Gly Lys Asp Pro Ser Lys Val
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Pro Tyr His Thr Gly Asp Pro Gln Leu Asp Thr Ala Ile Gly Gln Trp
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Leu Arg Trp Asp Lys Asn Pro Lys Thr Lys Glu Gln Ile Glu Asn Leu
35 40 45
Leu Arg Asn Gly Met Asn Lys Glu Leu Arg Asp Arg Leu Cys Cys Arg
50 55 60
Met Thr Phe Gly Thr Ala Gly Leu Arg Ser Ala Met Gly Ala Gly Phe
65 70 75 80
Cys Tyr Ile Asn Asp Leu Thr Val Ile Gln Ser Thr Gln Gly Met Tyr
85 90 95
Lys Tyr Leu Glu Arg Cys Phe Ser Asp Phe Lys Gln Arg Gly Phe Val
100 105 110
Val Gly Tyr Asp Thr Arg Gly Gln Val Thr Ser Ser Cys Ser Ser Gln
115 120 125
Arg Leu Ala Lys Leu Thr Ala Ala Val Leu Leu Ala Lys Asp Val Pro
130 135 140
Val Tyr Leu Phe Ser Arg Tyr Val Pro Thr Pro Phe Val Pro Tyr Ala
145 150 155 160

Val	Gln	Lys	Leu	Lys	Ala	Val	Ala	Gly	Val	Met	Ile	Thr	Ala	Ser	His	165	170	175
Asn	Arg	Lys	Glu	Asp	Asn	Gly	Tyr	Lys	Val	Tyr	Trp	Glu	Thr	Gly	Ala	180	185	190
Gln	Ile	Thr	Ser	Pro	His	Asp	Lys	Glu	Ile	Leu	Lys	Cys	Ile	Glu	Glu	195	200	205
Cys	Val	Glu	Pro	Trp	Asn	Gly	Ser	Trp	Asn	Asp	Asn	Leu	Val	Asp	Thr	210	215	220
Ser	Pro	Leu	Lys	Arg	Asp	Pro	Leu	Gln	Asp	Ile	Cys	Arg	Arg	Tyr	Met	225	230	235
Glu	Asp	Leu	Lys	Lys	Ile	Cys	Phe	Tyr	Arg	Glu	Leu	Asn	Ser	Lys	Thr	245	250	255
Thr	Leu	Lys	Phe	Val	His	Thr	Ser	Phe	His	Gly	Val	Gly	His	Asp	Tyr	260	265	270
Val	Gln	Leu	Ala	Phe	Lys	Val	Phe	Gly	Phe	Lys	Pro	Pro	Ile	Pro	Val	275	280	285
Pro	Glu	Gln	Lys	Asp	Pro	Asp	Pro	Asp	Phe	Ser	Thr	Val	Lys	Cys	Pro	290	295	300
Asn	Pro	Glu	Glu	Gly	Glu	Ser	Val	Leu	Glu	Leu	Ser	Leu	Arg	Leu	Ala	305	310	315
Glu	Lys	Glu	Asn	Ala	Arg	Val	Val	Leu	Ala	Thr	Asp	Pro	Asp	Ala	Asp	325	330	335
Arg	Leu	Ala	Ala	Ala	Glu	Leu	Gln	Glu	Asn	Gly	Cys	Trp	Lys	Val	Phe	340	345	350
Thr	Gly	Asn	Glu	Leu	Ala	Ala	Leu	Phe	Gly	Trp	Trp	Met	Phe	Asp	Cys	355	360	365
Trp	Lys	Lys	Asn	Lys	Ser	Arg	Asn	Ala	Asp	Val	Lys	Asn	Val	Tyr	Met	370	375	380
Leu	Ala	Thr	Thr	Val	Ser	Ser	Lys	Ile	Leu	Lys	Ala	Ile	Ala	Leu	Lys	385	390	395
Glu	Gly	Phe	His	Phe	Glu	Glu	Thr	Leu	Pro	Gly	Phe	Lys	Trp	Ile	Gly	405	410	415
Ser	Arg	Ile	Ile	Asp	Leu	Leu	Glu	Asn	Gly	Lys	Glu	Val	Leu	Phe	Ala	420	425	430
Phe	Glu	Glu	Ser	Ile	Gly	Phe	Leu	Cys	Gly	Thr	Ser	Val	Leu	Asp	Lys	435	440	445
Asp	Gly	Val	Ser	Ala	Ala	Val	Val	Val	Ala	Glu	Met	Ala	Ser	Tyr	Leu	450	455	460

Glu Thr Met Asn Ile Thr Leu Lys Gln Gln Leu Val Lys Val Tyr Glu
 465 470 475 480
 Lys Tyr Gly Tyr His Ile Ser Lys Thr Ser Tyr Phe Leu Cys Tyr Glu
 485 490 495
 Pro Pro Thr Ile Lys Ser Ile Phe Glu Arg Leu Arg Asn Phe Asp Ser
 500 505 510
 Pro Lys Glu Tyr Pro Lys Phe Cys Gly Thr Phe Ala Ile Leu His Val
 515 520 525
 Arg Asp Ile Thr Thr Gly Tyr Asp Ser Ser Gln Pro Asn Lys Lys Ser
 530 535 540
 Val Leu Pro Val Ser Lys Asn Ser Gln Met Ile Thr Phe Thr Phe Gln
 545 550 555 560
 Asn Gly Cys Val Ala Thr Leu Arg Thr Ser Gly Thr Glu Pro Lys Ile
 565 570 575
 Lys Tyr Tyr Ala Glu Met Cys Ala Ser Pro Asp Gln Ser Asp Thr Ala
 580 585 590
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 Asp Val Leu Val Arg Trp Lys Arg Ala Gly Ser Tyr Leu Leu Glu Glu
 35 40 45
 Leu Phe Glu Gly Asn Leu Glu Lys Glu Cys Tyr Glu Glu Thr Cys Val
 50 55 60
 Tyr Glu Glu Ala Arg Glu Val Phe Glu Asn Glu Val Val Thr Asp Glu
 65 70 75 80
 Phe Trp Arg Arg Tyr Lys Gly Gly Ser Pro Cys Ile Ser Gln Pro Cys
 85 90 95

Leu His Asn Gly Ser Cys Gln Asp Ser Ile Trp Gly Tyr Thr Cys Thr
 100 105 110
 Cys Ser Pro Gly Tyr Glu Gly Ser Asn Cys Glu Leu Ala Lys Asn Glu
 115 120 125
 Cys His Pro Glu Arg Thr Asp Gly Cys Gln His Phe Cys Leu Pro Gly
 130 135 140
 Gln Glu Ser Tyr Thr Cys Ser Cys Ala Gln Gly Tyr Arg Leu Gly Glu
 145 150 155 160
 Asp His Lys Gln Cys Val Pro His Asp Gln Cys Ala Cys Gly Val Leu
 165 170 175
 Thr Ser Glu Lys Arg Ala Pro Asp Leu Gln Asp Leu Pro Trp Gln Asn
 180 185 190
 Glu Pro Arg Pro Ala Asp Asp Gln Asp Asn Ala Arg Pro Cys Ala His
 195 200 205
 Ala Val
 210

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 1 5 10 15
 Asp His Pro Phe His Gln Gly Ala Gln Leu Gln Ala Glu Leu Arg Ser
 20 25 30
 Leu Lys Glu Ala Phe Ser Asn Phe Ser Ser Ser Thr Leu Thr Glu Val
 35 40 45
 Gln Ala Ile Ser Thr His Gly Gly Ser Val Gly Asp Lys Ile Thr Ser
 50 55 60
 Leu Gly Ala Lys Leu Glu Lys Gln Gln Gln Asp Leu Lys Ala Asp His
 65 70 75 80
 Asp Ala Leu Leu Phe His Leu Lys His Phe Pro Val Asp Leu Arg Phe
 85 90 95
 Val Ala Cys Gln Met Glu Leu Leu His Ser Asn Gly Ser Gln Arg Thr
 100 105 110
 Cys Cys Pro Val Asn Trp Val Glu His Gln Gly Ser Cys Tyr Trp Phe
 115 120 125

Ser His Ser Gly Lys Ala Trp Ala Glu Ala Glu Lys Tyr Cys Gln Leu
 130 135 140
 Glu Asn Ala His Leu Val Val Ile Asn Ser Trp Glu Glu Gln Lys Phe
 145 150 155 160
 Ile Val Gln His Thr Asn Pro Phe Asn Thr Trp Ile Gly Leu Thr Asp
 165 170 175
 Ser Asp Gly Ser Trp Lys Trp Val Asp Gly Thr Asp Tyr Arg His Asn
 180 185 190
 Tyr Lys Asn Trp Ala Val Thr Gln Pro Asp Asn Trp His Gly His Glu
 195 200 205
 Leu Gly Gly Ser Glu Asp Cys Val Glu Val Gln Pro Asp Gly Arg Trp
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 Asn Asp Asp Phe Cys Leu Gln Val Tyr Arg Trp Val Cys Gly Lys Arg
 225 230 235 240
 Arg Asn Ala Thr Gly Glu Val Ala
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 Leu His Arg Val Glu Pro Ser Val Phe Leu Pro Ala Ser Lys Ala Asn
 20 25 30
 Asp Val Leu Val Arg Trp Lys Arg Ala Gly Ser Tyr Leu Leu Glu Glu
 35 40 45
 Leu Phe Glu Gly Asn Leu Glu Lys Glu Cys Tyr Glu Glu Ile Cys Val
 50 55 60
 Tyr Glu Glu Ala Arg Glu Val Phe Glu Asn Glu Val Val Thr Asp Glu
 65 70 75 80
 Phe Trp Arg Arg Tyr Lys Gly Lys Trp Phe Pro Ser Ser Pro Gln Lys
 85 90 95

Tyr

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 Ser Ile Ser Pro Val Gly Cys Pro Arg Ile Leu Asn Thr Asn Leu Arg
 20 25 30
 Gln Ile Met Val Ile Ser Val Leu Ala Ala Val Ser Leu Leu Tyr
 35 40 45
 Phe Ser Val Val Ile Ile Arg Asn Lys Tyr Gly Arg Leu Thr Arg Asp
 50 55 60
 Lys Lys Phe Gln Arg Tyr Leu Ala Arg Val Thr Asp Ile Glu Ala Thr
 65 70 75 80
 Asp Thr Asn Asn Pro Asn Val Ser Tyr Gly Ile Val Val Asp Cys Gly
 85 90 95
 Ser Ser Gly Ser Arg Val Phe Val Tyr Cys Trp Pro Arg His Asn Gly
 100 105 110
 Asn Pro His Asp Leu Leu Asp Ile Arg Gln Met Arg Asp Lys Asn Arg
 115 120 125
 Lys Pro Val Val Met Lys Ile Lys Pro Gly Ile Ser Glu Phe Ala Thr
 130 135 140
 Ser Pro Glu Lys Val Ser Asp Tyr Ile Ser Pro Leu Leu Asn Phe Ala
 145 150 155 160
 Ala Glu His Val Pro Arg Ala Lys His Lys Glu Thr Pro Leu Tyr Ile
 165 170 175
 Leu Cys Thr Ala Gly Met Arg Ile Leu Pro Glu Ser Gln Gln Lys Ala
 180 185 190
 Ile Leu Glu Asp Leu Leu Thr Asp Ile Pro Val His Phe Asp Phe Leu
 195 200 205
 Phe Ser Asp Ser His Ala Glu Val Ile Ser Gly Lys Gln Glu Gly Val
 210 215 220
 Tyr Ala Trp Ile Gly Ile Asn Phe Val Leu Gly Arg Phe Glu His Ile
 225 230 235 240
 Glu Asp Asp Asp Glu Ala Val Val Glu Val Asn Ile Pro Gly Ser Glu
 245 250 255

Ser Ser Glu Ala Ile Val Arg Lys Arg Thr Ala Gly Ile Leu Asp Met
 260 265 270
 Gly Gly Val Ser Thr Gln Ile Ala Tyr Glu Val Pro Lys Thr Glu Glu
 275 280 285
 Val Ala Lys Asn Leu Leu Ala Glu Phe Asn Leu Gly Cys Asp Val His
 290 295 300
 Gln Thr Glu His Val Tyr Arg Val Tyr Val Ala Thr Phe Leu Gly Phe
 305 310 315 320
 Gly Gly Asn Ala Ala Arg Gln Arg Tyr Glu Asp Arg Ile Phe Ala Asn
 325 330 335
 Thr Ile Gln Lys Asn Arg Leu Leu Gly Lys Gln Thr Gly Leu Thr Pro
 340 345 350
 Asp Met Pro Tyr Leu Asp Pro Cys Leu Pro Leu Asp Ile Lys Asp Glu
 355 360 365
 Ile Gln Gln Asn Gly Gln Thr Ile Tyr Leu Arg Gly Thr Gly Asp Phe
 370 375 380
 Asp Leu Cys Arg Glu Thr Ile Gln Pro Phe Met Asn Lys Thr Asn Glu
 385 390 395 400
 Thr Gln Thr Ser Leu Asn Gly Val Tyr Gln Pro Pro Ile His Phe Gln
 405 410 415
 Asn Ser Glu Phe Tyr Gly Phe Ser Glu Phe Tyr Tyr Cys Thr Glu Asp
 420 425 430
 Val Leu Arg Met Gly Gly Asp Tyr Asn Ala Ala Lys Phe Thr Lys Ala
 435 440 445
 Ala Lys Asp Tyr Cys Ala Thr Lys Trp Ser Ile Leu Arg Glu Arg Phe
 450 455 460
 Asp Arg Gly Leu Tyr Ala Ser His Ala Asp Leu His Arg Leu Lys
 465 470 475

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 Ser Lys Val Pro Ser Ser Leu Ser Gln Glu Gln Ser Glu Gln Asp Ala
 20 25 30

Ile Tyr Gln Asn Leu Thr Gln Leu Lys Ala Ala Val Gly Glu Leu Ser
 35 40 45
 Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr Gln Leu Lys
 50 55 60
 Ala Ala Val Gly Glu Leu Pro Glu Lys Ser Lys Leu Gln Glu Ile Tyr
 65 70 75 80
 Gln Glu Leu Thr Arg Leu Lys Ala Ala Val Gly Glu Leu Pro Glu Lys
 85 90 95
 Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr Arg Leu Lys Ala Ala
 100 105 110
 Val Gly Glu Leu Pro Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu
 115 120 125
 Leu Thr Gln Leu Lys Ala Ala Val Gly Glu Leu Pro Asp Gln Ser Lys
 130 135 140
 Gln Gln Gln Ile Tyr Gln Glu Leu Thr Asp Leu Lys Thr Ala Phe Glu
 145 150 155 160
 Arg Leu Cys Arg His Cys Pro Lys Asp Trp Thr Phe Phe Gln Gly Asn
 165 170 175
 Cys Tyr Phe Met Ser Asn Ser Gln Arg Asn Trp His Asn Ser Val Thr
 180 185 190
 Ala Cys Gln Glu Val Arg Ala Gln Leu Val Val Ile Lys Thr Ala Glu
 195 200 205
 Glu Gln Leu Pro Ala Val Leu Glu Gln Trp Arg Thr Gln Gln
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<211> 370

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 Gln Gln Ile His Gly His Lys Ser Ser Thr Val Ser Lys Val Pro Ser
 35 40 45
 Ser Leu Ser Gln Glu Gln Ser Glu Gln Asp Ala Ile Tyr Gln Asn Leu
 50 55 60

Thr	Gln	Leu	Lys	Ala	Ala	Val	Gly	Glu	Leu	Ser	Glu	Lys	Ser	Lys	Leu	65	70	75	80
Gln	Glu	Ile	Tyr	Gln	Glu	Leu	Thr	Gln	Leu	Lys	Ala	Ala	Val	Gly	Glu	85	90	95	
Leu	Pro	Glu	Lys	Ser	Lys	Leu	Gln	Glu	Ile	Tyr	Gln	Glu	Leu	Thr	Arg	100	105	110	
Leu	Lys	Ala	Ala	Val	Gly	Glu	Leu	Pro	Glu	Lys	Ser	Lys	Leu	Gln	Glu	115	120	125	
Ile	Tyr	Gln	Glu	Leu	Thr	Arg	Leu	Lys	Ala	Ala	Val	Gly	Glu	Leu	Pro	130	135	140	
Glu	Lys	Ser	Lys	Leu	Gln	Glu	Ile	Tyr	Gln	Glu	Leu	Thr	Arg	Leu	Lys	145	150	155	160
Ala	Ala	Val	Gly	Glu	Leu	Pro	Glu	Lys	Ser	Lys	Leu	Gln	Glu	Ile	Tyr	165	170	175	
Gln	Glu	Leu	Thr	Glu	Leu	Lys	Ala	Ala	Val	Gly	Glu	Leu	Pro	Glu	Lys	180	185	190	
Ser	Lys	Leu	Gln	Glu	Ile	Tyr	Gln	Glu	Leu	Thr	Gln	Leu	Lys	Ala	Ala	195	200	205	
Val	Gly	Glu	Leu	Pro	Asp	Gln	Ser	Lys	Gln	Gln	Gln	Ile	Tyr	Gln	Glu	210	215	220	
Leu	Thr	Asp	Leu	Lys	Thr	Ala	Phe	Glu	Arg	Leu	Cys	Arg	His	Cys	Pro	225	230	235	240
Lys	Asp	Trp	Thr	Phe	Phe	Gln	Gly	Asn	Cys	Tyr	Phe	Met	Ser	Asn	Ser	245	250	255	
Gln	Arg	Asn	Trp	His	Asp	Ser	Val	Thr	Ala	Cys	Gln	Glu	Val	Arg	Ala	260	265	270	
Gln	Leu	Val	Val	Ile	Lys	Thr	Ala	Glu	Glu	Gln	Asn	Phe	Leu	Gln	Leu	275	280	285	
Gln	Thr	Ser	Arg	Ser	Asn	Arg	Phe	Ser	Trp	Met	Gly	Leu	Ser	Asp	Leu	290	295	300	
Asn	Gln	Glu	Gly	Thr	Trp	Gln	Trp	Val	Asp	Gly	Ser	Pro	Leu	Ser	Pro	305	310	315	320
Ser	Phe	Gln	Arg	Tyr	Trp	Asn	Ser	Gly	Glu	Pro	Asn	Asn	Ser	Gly	Asn	325	330	335	
Glu	Asp	Cys	Ala	Glu	Phe	Ser	Gly	Ser	Gly	Trp	Asn	Asp	Asn	Arg	Cys	340	345	350	
Asp	Val	Asp	Asn	Tyr	Trp	Ile	Cys	Lys	Lys	Pro	Ala	Pro	Arg	Phe	Arg	355	360	365	

Asp Glu
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Phe Ser Ser Gln Met Phe Leu Trp Thr Val Ala Gly Ile Pro Ile Leu
20 25 30
Phe Leu Ser Ala Cys Phe Ile Thr Arg Cys Val Val Thr Phe Arg Ile
35 40 45
Phe Gln Thr Cys Asp Glu Lys Lys Phe Gln Leu Pro Glu Asn Phe Thr
50 55 60
Glu Leu Ser Cys Tyr Asn Tyr Gly Ser Ala Ser Gly Met
65 70 75

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Leu Leu Asp Pro His Ser Pro Glu Thr Gly Cys Pro Pro Leu Arg Arg
20 25 30
Phe Glu Tyr Lys Leu Ser Phe Lys Gly Pro Arg Leu Ala Leu Pro Gly
35 40 45
Ala Gly Ile Pro Phe Trp Ser His His Gly Asp Ala Ile Leu Gly Leu
50 55 60
Glu Glu Val Arg Leu Thr Pro Ser Met Arg Asn Arg Ser Gly Ala Val
65 70 75 80
Trp Ser Arg Ala Ser Val Pro Phe Ser Ala Trp Glu Val Glu Val Gln
85 90 95
Met Arg Val Thr Gly Leu Gly Arg Arg Gly Ala Gln Gly Met Ala Val
100 105 110

Trp	Tyr	Thr	Arg	Gly	Arg	Gly	His	Val	Gly	Ser	Val	Leu	Gly	Gly	Leu	115	120	125
Ala	Ser	Trp	Asp	Gly	Ile	Gly	Ile	Phe	Phe	Asp	Ser	Pro	Ala	Glu	Asp	130	135	140
Thr	Gln	Asp	Ser	Pro	Ala	Ile	Arg	Val	Leu	Ala	Ser	Asp	Gly	His	Ile	145	150	155
Pro	Ser	Glu	Gln	Pro	Gly	Asp	Gly	Ala	Ser	Gln	Gly	Leu	Gly	Ser	Cys	165	170	175
His	Trp	Asp	Phe	Arg	Asn	Arg	Pro	His	Pro	Phe	Arg	Ala	Arg	Ile	Thr	180	185	190
Tyr	Trp	Gly	Gln	Arg	Leu	Arg	Met	Ser	Leu	Asn	Ser	Gly	Leu	Thr	Pro	195	200	205
Ser	Asp	Pro	Asp	Asp	His	Asp	Val	Leu	Ser	Phe	Leu	Thr	Phe	Ser	Leu	210	215	220
Ser	Glu	Pro	Ser	Pro	Glu	Val	Pro	Pro	Gln	Pro	Phe	Leu	Glu	Met	Gln	225	230	235
Gln	Leu	Arg	Leu	Ala	Arg	Gln	Leu	Glu	Gly	Leu	Trp	Ala	Arg	Leu	Gly	245	250	255
Leu	Gly	Thr	Arg	Glu	Asp	Val	Thr	Pro	Lys	Ser	Asp	Ser	Glu	Ala	Gln	260	265	270
Gly	Glu	Gly	Glu	Arg	Leu	Phe	Asp	Leu	Glu	Glu	Thr	Leu	Gly	Arg	His	275	280	285
Arg	Arg	Ile	Leu	Gln	Ala	Leu	Arg	Gly	Leu	Ser	Lys	Gln	Leu	Ala	Gln	290	295	300
Ala	Glu	Arg	Gln	Trp	Lys	Lys	Gln	Leu	Gly	Pro	Pro	Gly	Gln	Ala	Arg	305	310	315
Pro	Asp	Gly	Gly	Trp	Ala	Leu	Asp	Ala	Ser	Cys	Gln	Ile	Pro	Ser	Thr	325	330	335
Pro	Gly	Arg	Gly	Gly	His	Leu	Ser	Met	Ser	Leu	Asn	Lys	Asp	Ser	Ala	340	345	350
Lys	Val	Gly	Ala	Leu	Leu	His	Gly	Gln	Trp	Thr	Leu	Leu	Gln	Ala	Leu	355	360	365
Gln	Glu	Met	Ser	Arg	Gln	Glu	Leu	Asn	Lys	Ser	Leu	Gln	Glu	Cys	Leu	370	375	380
Ser	Thr	Gly	Ser	Leu	Pro	Leu	Gly	Pro	Ala	Pro	His	Thr	Pro	Arg	Ala	385	390	395
Leu	Gly	Ile	Leu	Met	Arg	Gln	Pro	Leu	Pro	Ala	Ser	Met	Pro	Ala		405	410	415

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 <213> Homo sapiens

<220>
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 Pro Gly Gly Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu
 20 25 30
 Glu Leu Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe
 35 40 45
 Gln Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Gly Leu
 50 55 60
 Ser Val Leu Leu Lys Ala Asp Arg Leu Phe His Thr Ser Tyr His Ser
 65 70 75 80
 Gln Ala Val His Ile Arg Pro Val Cys Arg Asn Ala Arg Cys Thr Ser
 85 90 95
 Ile Ser Trp Glu Leu Arg Gln Thr Leu Ser Val Val Phe Asp Ala Phe
 100 105 110
 Ile Ala Gly Gln Gly Lys Lys Asp Trp Ser Leu Phe Arg Met Phe Ser
 115 120 125
 Arg Thr Leu Thr Glu Pro Cys Pro Leu Ala Ser Glu Ser Arg Val Tyr
 130 135 140
 Val Asp Ile Thr Thr Tyr Asn Gln Asp Asn Glu Thr Leu Glu Val His
 145 150 155 160
 Pro Pro Pro Thr Thr Thr Tyr Gln Asp Val Ile Leu Gly Thr Arg Lys
 165 170 175
 Thr Tyr Ala Ile Tyr Asp Leu Leu Asp Thr Ala Met Ile Asn Asn Ser
 180 185 190
 Arg Asn Leu Asn Ile Gln Leu Lys Trp Lys Arg Pro Pro Glu Asn Glu
 195 200 205
 Ala Pro Pro Val Pro Phe Leu Arg Ala Gln Arg Tyr Val Ser Gly Tyr
 210 215 220
 Gly Leu Gln Lys Gly Glu Leu Ser Thr Leu Leu Tyr Asn Thr His Pro
 225 230 235 240
 Tyr Arg Ala Phe Pro Val Leu Leu Leu Asp Thr Val Pro Trp Tyr Leu
 245 250 255

Arg Leu Tyr Val His Thr Leu Thr Ile Thr Ser Lys Gly Lys Glu Asn
 260 265 270
 Lys Pro Ser Tyr Ile His Tyr Gln Pro Ala Gln Asp Arg Leu Gln Pro
 275 280 285
 His Leu Leu Glu Met Leu Ile Gln Leu Pro Ala Asn Ser Val Thr Lys
 290 295 300
 Val Ser Ile Gln Phe Glu Arg Ala Leu Leu Lys Trp Thr Glu Tyr Thr
 305 310 315 320
 Pro Asp Pro Asn His Gly Phe Tyr Val Ser Pro Ser Val Leu Ser Ala
 325 330 335
 Leu Val Pro Ser Met Val Ala Ala Lys Pro Val Asp Trp Glu Glu Ser
 340 345 350
 Pro Leu Phe Asn Ser Leu Phe Pro Val Ser Asp Gly Ser Asn Tyr Phe
 355 360 365
 Val Arg Leu Tyr Thr Glu Pro Leu Leu Val Asn Leu Pro Thr Pro Asp
 370 375 380
 Phe Ser Met Pro Tyr Asn Val Ile Cys Leu Thr Cys Thr Val Val Ala
 385 390 395 400
 Val Cys Tyr Gly Ser Phe Tyr Asn Leu Leu Thr Arg Thr Phe His Ile
 405 410 415
 Glu Glu Pro Arg Thr Gly Gly Leu Ala Lys Arg Leu Ala Asn Leu Ile
 420 425 430
 Arg Arg Ala Arg Gly Val Pro Pro Leu
 435 440

<210> 12

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<400> 12

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 Tyr Pro Pro Gly Met Ala Asp Asp Asn Gly Glu Pro Ser Asp Asp Leu
 20 25 30
 Val Pro Ala Ile Leu Asp Thr Ala His Gln Tyr Ser Ile Gln Val Ala
 35 40 45
 Phe His Ile Gln Pro Tyr Lys Gly Arg Asp Asp Ile Thr Val His Asp
 50 55 60

Asn Ile Lys Tyr Ile Ile Asp Thr Tyr Gly Ser His Gly Ala Phe Tyr
 65 70 75 80
 Arg Tyr Lys Asn Ser Met Gly Lys Ser Leu Pro Leu Phe Tyr Ile Tyr
 85 90 95
 Asp Ser Tyr Leu Thr Ser Pro Glu Ala Trp Ala His Leu Leu Thr Pro
 100 105 110
 Asn Gly Pro His Ser Ile Arg Asn Thr Pro Tyr Asp Gly Val Phe Ile
 115 120 125
 Ala Leu Leu Val Glu Glu Gly His Thr His Asp Ile Leu Ala Ala Gly
 130 135 140
 Phe Asp Gly Met Tyr Thr Tyr Phe Ala Ser Asn Gly Phe Ser Phe Gly
 145 150 155 160
 Ser Ser His Gln Asn Trp Lys Ala Val Lys Asn Phe Cys Asp Ala Asn
 165 170 175
 Asn Leu Met Phe Ile Pro Ser Val Gly Pro Gly Tyr Ile Asp Thr Ser
 180 185 190
 Ile Arg Pro Trp Asn Asn His Asn Thr Arg Asn Arg Val Asn Gly Lys
 195 200 205
 Tyr Tyr Glu Thr Ala Leu Gln Ala Ala Leu Thr Val Arg Pro Glu Ile
 210 215 220
 Val Ser Ile Thr Ser Phe Asn Glu Trp His Glu Gly Thr Gln Ile Glu
 225 230 235 240
 Lys Ala Ile Pro Lys Lys Thr Pro Thr Arg Leu Tyr Leu Asp Tyr Leu
 245 250 255
 Pro His Gln Pro Ser Leu Tyr Leu Glu Leu Thr Arg Arg Trp Ala Glu
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<210> 13

<211> 159

<212> PRT

<213> Homo sapiens

<220>

<223> Incyte ID NO: 7515124CD1

<400> 13

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Tyr Gln Pro Met Met Gln Thr Ile Gly Gln Lys Tyr Cys Met Asp Pro
 35 40 45
 Ala Val Ile Ala Gly Val Leu Ser Arg Lys Ser Pro Gly Asp Lys Ile
 50 55 60
 Leu Val Asn Met Gly Asp Arg Thr Ser Met Val Gln Asp Pro Gly Ser
 65 70 75 80
 Gln Ala Pro Thr Ser Trp Ile Ser Glu Ser Gln Val Ser Gln Thr Thr
 85 90 95
 Glu Val Leu Thr Thr Arg Ile Lys Glu Ile Gln Arg Arg Phe Pro Thr
 100 105 110
 Trp Thr Pro Asp Gln Tyr Leu Arg Gly Gly Leu Cys Ala Tyr Ser Gly
 115 120 125
 Gly Ala Gly Tyr Val Arg Ser Ser Gln Asp Leu Ser Cys Asp Phe Cys
 130 135 140
 Asn Asp Val Leu Ala Arg Ala Lys Tyr Leu Lys Arg His Gly Phe
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<210> 14

<211> 154

<212> PRT

<213> Homo sapiens

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<223> Incyte ID NO: 7514570CD1

<400> 14

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 20 25 30
 Cys Leu Gln Ala Ala Cys Pro Glu Ser Trp Ile Gly Phe Gln Arg Lys
 35 40 45
 Cys Phe Tyr Phe Ser Asp Asp Thr Lys Asn Trp Thr Ser Ser Gln Arg
 50 55 60
 Phe Cys Asp Ser Gln Asp Ala Asp Leu Ala Gln Val Glu Ser Phe Gln
 65 70 75 80
 Glu Leu Asn Phe Leu Leu Arg Tyr Lys Gly Pro Ser Asp His Trp Ile
 85 90 95
 Gly Leu Ser Arg Glu Gln Gly Gln Pro Trp Lys Trp Ile Asn Gly Thr
 100 105 110
 Glu Trp Thr Arg Gln Phe Pro Ile Leu Gly Ala Gly Glu Cys Ala Tyr
 115 120 125

Leu Asn Asp Lys Gly Ala Ser Ser Ala Arg His Tyr Thr Glu Arg Lys
 130 135 140

Trp Ile Cys Ser Lys Ser Asp Ile His Val
 145 150

<210> 15

<211> 431

<212> PRT

<213> Homo sapiens

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<223> Incyte ID NO: 7515114CD1

<400> 15

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Leu Leu Asp Pro His Ser Pro Glu Thr Gly Cys Pro Pro Leu Arg Arg
 20 25 30

Phe Glu Tyr Lys Leu Ser Phe Lys Gly Pro Arg Leu Ala Leu Pro Gly
 35 40 45

Ala Gly Ile Pro Phe Trp Ser His His Gly Asp Ala Ile Leu Gly Leu
 50 55 60

Glu Glu Val Arg Leu Thr Pro Ser Met Arg Asn Arg Ser Gly Ala Val
 65 70 75 80

Trp Ser Arg Ala Ser Val Pro Phe Ser Ala Trp Glu Val Glu Val Gln
 85 90 95

Met Arg Val Thr Gly Leu Gly Arg Arg Gly Ala Gln Gly Met Ala Val
 100 105 110

Trp Tyr Thr Arg Gly Arg Gly His Val Gly Ser Val Leu Gly Gly Leu
 115 120 125

Ala Ser Trp Asp Gly Ile Gly Ile Phe Phe Asp Ser Pro Ala Glu Asp
 130 135 140

Thr Gln Asp Ser Pro Ala Ile Arg Val Leu Ala Ser Asp Gly His Ile
 145 150 155 160

Pro Ser Glu Gln Pro Gly Asp Gly Ala Ser Gln Gly Leu Gly Ser Cys
 165 170 175

His Trp Asp Phe Arg Asn Arg Pro His Pro Phe Arg Ala Arg Ile Thr
 180 185 190

Tyr Trp Gly Gln Arg Leu Arg Met Ser Leu Asn Ser Gly Leu Thr Pro
 195 200 205

Ser Asp Pro Gly Glu Phe Cys Val Asp Val Gly Pro Leu Leu Leu Val
 210 215 220

Pro Gly Gly Phe Phe Gly Val Ser Ala Ala Thr Gly Thr Leu Ala Gly
 225 230 235 240
 Glu Asp Pro Thr Gly Gln Val Pro Pro Gln Pro Phe Leu Glu Met Gln
 245 250 255
 Gln Leu Arg Leu Ala Arg Gln Leu Glu Gly Leu Trp Ala Arg Leu Gly
 260 265 270
 Leu Gly Thr Arg Glu Asp Val Thr Pro Lys Ser Asp Ser Glu Ala Gln
 275 280 285
 Gly Glu Gly Glu Arg Leu Phe Asp Leu Glu Glu Thr Leu Gly Arg His
 290 295 300
 Arg Arg Ile Leu Gln Ala Leu Arg Gly Leu Ser Lys Gln Leu Ala Gln
 305 310 315 320
 Ala Glu Arg Gln Trp Lys Lys Gln Leu Gly Pro Pro Gly Gln Thr Arg
 325 330 335
 Pro Asp Gly Gly Trp Ala Leu Asp Ala Ser Cys Gln Ile Pro Ser Thr
 340 345 350
 Pro Gly Arg Gly Gly His Leu Ser Met Ser Leu Asn Lys Asp Ser Ala
 355 360 365
 Lys Val Gly Ala Leu Leu His Gly Gln Trp Thr Leu Leu Gln Ala Leu
 370 375 380
 Gln Glu Met Ser Arg Gln Glu Leu Asn Lys Ser Leu Gln Glu Cys Leu
 385 390 395 400
 Ser Thr Gly Ser Leu Pro Leu Gly Pro Ala Pro His Thr Pro Arg Ala
 405 410 415
 Leu Gly Ile Leu Arg Arg Gln Pro Leu Pro Ala Ser Met Pro Ala
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<210> 16

<211> 442

<212> PRT

<213> Homo sapiens

<220>

<223> Incyte ID NO: 7515136CD1

<400> 16

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 Leu Leu Asp Pro His Ser Pro Glu Thr Gly Cys Pro Pro Leu Arg Arg
 20 25 30
 Phe Glu Tyr Lys Leu Ser Phe Lys Gly Pro Arg Leu Ala Leu Pro Gly
 35 40 45

Ala Gly Ile Pro Phe Trp Ser His His Gly Asp Ala Ile Leu Gly Leu
 50 55 60
 Glu Glu Val Arg Leu Thr Pro Ser Met Arg Asn Arg Ser Gly Ala Val
 65 70 75 80
 Trp Ser Arg Ala Ser Val Pro Phe Ser Ala Trp Glu Val Glu Val Gln
 85 90 95
 Met Arg Val Thr Gly Leu Gly Arg Arg Gly Ala Gln Gly Met Ala Val
 100 105 110
 Trp Tyr Thr Arg Gly Arg Gly His Val Gly Ser Val Leu Gly Gly Leu
 115 120 125
 Ala Ser Trp Asp Gly Ile Gly Ile Phe Phe Asp Ser Pro Ala Glu Asp
 130 135 140
 Thr Gln Asp Ser Pro Ala Ile Arg Val Leu Ala Ser Asp Gly His Ile
 145 150 155 160
 Pro Ser Glu Gln Pro Gly Asp Gly Ala Ser Gln Gly Leu Gly Ser Cys
 165 170 175
 His Trp Asp Phe Arg Asn Arg Pro His Pro Phe Arg Ala Arg Ile Thr
 180 185 190
 Tyr Trp Gly Gln Arg Leu Arg Met Ser Leu Asn Ser Gly Leu Thr Pro
 195 200 205
 Ser Asp Pro Gly Glu Phe Cys Val Asp Val Gly Pro Leu Leu Leu Val
 210 215 220
 Pro Gly Gly Phe Phe Gly Val Ser Ala Ala Thr Gly Thr Leu Ala Asp
 225 230 235 240
 Asp His Asp Val Leu Ser Phe Leu Thr Phe Ser Leu Ser Glu Pro Ser
 245 250 255
 Pro Glu Val Pro Pro Gln Pro Phe Leu Glu Met Gln Gln Leu Arg Leu
 260 265 270
 Ala Arg Gln Leu Glu Gly Leu Trp Ala Arg Leu Gly Leu Gly Thr Arg
 275 280 285
 Glu Asp Val Thr Pro Lys Ser Asp Ser Glu Ala Gln Gly Glu Gly Glu
 290 295 300
 Arg Leu Phe Asp Leu Glu Glu Thr Leu Gly Arg His Arg Arg Ile Leu
 305 310 315 320
 Gln Ala Leu Arg Gly Leu Ser Lys Gln Leu Ala Gln Ala Glu Arg Gln
 325 330 335
 Trp Lys Lys Gln Leu Gly Pro Pro Gly Gln Ala Arg Pro Asp Gly Gly
 340 345 350

Trp Ala Leu Asp Ala Ser Cys Gln Ile Pro Ser Thr Pro Gly Arg Gly
 355 360 365
 Gly His Leu Ser Met Ser Leu Asn Lys Asp Ser Ala Lys Val Gly Ala
 370 375 380
 Leu Leu His Gly Gln Trp Thr Leu Leu Arg Ala Leu Gln Glu Met Arg
 385 390 395 400
 Gln Glu Leu Asn Lys Ser Leu Gln Glu Cys Leu Ser Thr Gly Ser Leu
 405 410 415
 Pro Leu Gly Pro Ala Pro His Thr Pro Arg Ala Leu Gly Ile Leu Arg
 420 425 430
 Arg Gln Pro Leu Pro Ala Ser Met Pro Ala
 435 440

<210> 17
 <211> 198
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Incyte ID NO: 7515308CD1

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 Tyr Ser Gln Leu Leu Glu Lys Lys Thr Thr Lys Glu Leu Val His Thr
 35 40 45
 Thr Leu Glu Cys Val Lys Lys Asn Met Pro Val Glu Glu Thr Ala Trp
 50 55 60
 Ser Cys Cys Pro Lys Asn Trp Lys Ser Phe Ser Ser Asn Cys Tyr Phe
 65 70 75 80
 Ile Ser Thr Glu Ser Ala Ser Trp Gln Asp Ser Glu Lys Asp Cys Ala
 85 90 95
 Arg Met Glu Ala His Leu Leu Val Ile Asn Thr Gln Glu Glu Gln Asp
 100 105 110
 Phe Ile Phe Gln Asn Leu Gln Glu Glu Ser Ala Tyr Phe Val Gly Leu
 115 120 125
 Ser Asp Pro Glu Gly Gln Arg His Trp Gln Trp Val Asp Gln Thr Pro
 130 135 140
 Tyr Asn Glu Ser Ser Ala Phe Trp His Pro Arg Glu Pro Ser Asp Pro
 145 150 155 160

Asn Glu Arg Cys Val Val Leu Asn Phe Arg Lys Ser Pro Lys Arg Trp
 165 170 175

Gly Trp Asn Asp Val Asn Cys Leu Gly Pro Gln Arg Ser Val Cys Glu
 180 185 190

Met Met Lys Ile His Leu
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<210> 18

<211> 336

<212> PRT

<213> Homo sapiens

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<223> Incyte ID NO: 7516738CD1

<400> 18

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 20 25 30

Ser Ala Cys Thr Leu Val Met Cys Ser Ser Val Glu Ser Gly Leu Pro
 35 40 45

Gly Arg Asp Gly Arg Asp Gly Arg Glu Gly Pro Arg Gly Glu Lys Gly
 50 55 60

Asp Pro Gly Leu Pro Gly Ala Ala Gly Gln Ala Gly Met Pro Gly Gln
 65 70 75 80

Ala Gly Pro Val Gly Pro Lys Gly Asp Asn Gly Ser Val Gly Glu Pro
 85 90 95

Gly Pro Lys Gly Asp Thr Gly Pro Ser Gly Glu Val Gly Ala Pro Gly
 100 105 110

Met Gln Gly Ser Ala Gly Ala Arg Gly Leu Ala Gly Pro Lys Gly Glu
 115 120 125

Arg Gly Val Pro Gly Glu Arg Gly Val Pro Gly Asn Ala Gly Ala Ala
 130 135 140

Gly Ser Ala Gly Ala Met Gly Pro Gln Gly Ser Pro Gly Ala Arg Gly
 145 150 155 160

Pro Pro Gly Leu Lys Gly Asp Lys Gly Ile Pro Gly Asp Lys Gly Ala
 165 170 175

Lys Gly Glu Ser Gly Leu Pro Asp Val Ala Ser Leu Arg Gln Gln Val
 180 185 190

Glu Ala Leu Gln Gly Gln Val Gln His Leu Gln Ala Ala Phe Ser Gln
 195 200 205

Tyr Lys Lys Val Glu Leu Phe Pro Asn Gly Gln Ser Val Gly Glu Lys
 210 215 220
 Ile Phe Lys Thr Ala Gly Phe Val Lys Pro Phe Thr Glu Ala Gln Leu
 225 230 235 240
 Leu Cys Thr Gln Ala Gly Gly Gln Leu Ala Ser Pro Arg Ser Ala Ala
 245 250 255
 Glu Asn Ala Ala Leu Gln Gln Leu Val Val Ala Lys Asn Glu Ala Ala
 260 265 270
 Phe Leu Ser Met Thr Asp Ser Lys Thr Glu Gly Lys Phe Thr Tyr Pro
 275 280 285
 Thr Gly Glu Ser Leu Val Tyr Ser Asn Trp Ala Pro Gly Glu Pro Asn
 290 295 300
 Asp Asp Gly Gly Ser Glu Asp Cys Val Glu Ile Phe Thr Asn Gly Lys
 305 310 315 320
 Trp Asn Asp Arg Ala Cys Gly Glu Lys Arg Leu Val Val Cys Glu Phe
 325 330 335

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 <211> 258
 <212> PRT
 <213> Homo sapiens

<220>
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 Ile Val Ile Cys Gly His Val Pro Ser Asp Ala Asp Arg Phe Gln Val
 35 40 45
 Asp Leu Gln Asn Gly Ser Ser Val Lys Pro Arg Ala Asp Val Ala Phe
 50 55 60
 His Phe Asn Pro Arg Phe Lys Arg Ala Gly Cys Ile Val Cys Asn Thr
 65 70 75 80
 Leu Ile Asn Glu Lys Trp Gly Arg Glu Glu Ile Thr Tyr Asp Thr Pro
 85 90 95
 Phe Lys Arg Glu Lys Ser Phe Glu Ile Val Ile Met Val Leu Lys Asp
 100 105 110

Lys Phe Gln Val Pro Lys Ser Gly Thr Pro Gln Leu Ser Leu Pro Phe
 115 120 125
 Ala Ala Arg Leu Asn Thr Pro Met Gly Pro Gly Arg Thr Val Val Val
 130 135 140
 Lys Gly Glu Val Asn Ala Asn Ala Lys Ser Phe Asn Val Asp Leu Leu
 145 150 155 160
 Ala Gly Lys Ser Lys Asp Ile Ala Leu His Leu Asn Pro Arg Leu Asn
 165 170 175
 Ile Lys Ala Phe Val Arg Asn Ser Phe Leu Gln Glu Ser Trp Gly Glu
 180 185 190
 Glu Glu Arg Asn Ile Thr Ser Phe Pro Phe Ser Pro Gly Met Tyr Phe
 195 200 205
 Glu Met Ile Ile Tyr Cys Asp Val Arg Glu Phe Lys Val Ala Val Asn
 210 215 220
 Gly Val His Ser Leu Glu Tyr Lys His Arg Phe Lys Glu Leu Ser Ser
 225 230 235 240
 Ile Asp Thr Leu Glu Ile Asn Gly Asp Ile His Leu Leu Glu Val Arg
 245 250 255
 Ser Trp

<210> 20
 <211> 132
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Incyte ID NO: 7513061CD1

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 20 25 30
 Arg Ile Ser Cys Pro Glu Gly Thr Asn Ala Tyr Arg Ser Tyr Cys Tyr
 35 40 45
 Tyr Phe Asn Glu Asp Pro Glu Thr Trp Val Asp Ala Asp Leu Tyr Cys
 50 55 60
 Gln Asn Met Asn Ser Gly Asn Leu Val Ser Val Leu Thr Gln Ala Glu
 65 70 75 80
 Gly Ala Phe Val Ala Ser Leu Ile Lys Glu Ser Ser Thr Asp Asp Ser
 85 90 95

Asn Val Trp Ile Gly Leu His Asp Pro Lys Lys Asp Ser Arg Asn Gly
 100 105 110

Arg Met Asn Leu Val Arg Arg Ser Ser Pro Leu Phe Ala Ser Ser Lys
 115 120 125

Thr Arg Gly Ser
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<210> 21
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 <212> DNA
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<220>
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 <212> DNA
 <213> Homo sapiens

<220>
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<211> 1123

<212> DNA

<213> Homo sapiens

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<223> Incyte ID NO: 7521726CB1

<400> 23

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 <212> DNA
 <213> Homo sapiens

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 <223> Incyte ID NO: 7523383CB1

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<211> 1379

<212> DNA

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<220>

<223> Incyte ID NO: 7515136CB1

<400> 36

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<211> 999

<212> DNA

<213> Homo sapiens

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<223> Incyte ID NO: 7515308CB1

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